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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/925,700	08/10/2001	Takefumi Sawada	381KA/50302	4247
7590 08/09/2004 CROWELL & MORING, L.L.P. P.O. BOX 14300 WASHINGTON, DC 20044-4300			EXAMINER SAN MARTIN, EDGARDO	
			ART UNIT 2837	PAPER NUMBER

DATE MAILED: 08/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/925,700

Applicant(s)

SAWADA ET AL.

Examiner

Edgardo San Martin

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-12 is/are allowed.
- 6) ☒ Claim(s) 1 and 13-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 19, 2004 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 13 – 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakada et al. (JP 2000134976 A) in view of Kaneko et al. (US 5,994,870).

With respect to Claims 1, 15, 22 and 23, Nakada et al. teach a motor control apparatus for controlling a voltage applied to an alternating current (AC) motor using a PWM signal, comprising magnetic position detecting means; and fault detecting means

for detecting a fault in an detected magnetic pole position of the AC motor (Fig.1; Abstract), but fail to disclose the magnetic pole position being estimated by detecting a current of the AC motor.

On the other hand, Kaneko et al. teach a synchronous motor controller comprising a magnetic position estimating means (Fig.1, Item 8a) for detecting a current of the motor to estimate a magnetic pole position of motor (Col.6, Lines 26 - 35).

It would have been obvious to a person with ordinary skill in the art to employ the Kaneko et al. magnetic position estimating means as the Nakada et al. magnetic position detector because the magnetic position estimating means would reduce costs, would simplify the circuit assembly and would increase the reliability of the system by employing less equipment, diminishing the amount of extra equipment that could malfunction at some point in time.

With respect to Claim 13, Nakada et al. teach wherein the fault detecting means shuts down an associated system when the fault detecting means detects a fault, the fault including oscillation and inversion of an estimated magnetic pole position (Abstract).

With respect to Claim 14, Kaneko et al. teach wherein a polarity discriminating means corrects the polarity to continue a control when a fault detecting means detects a fault (Col.11, Line 47 – Col.13, Line 5).

With respect to Claims 15 and 23, Kaneko et al. teach an electric vehicle equipped with a motor control apparatus that controls the motor based on a detected pole position (Fig.1; Col.2, Line 38 – Col.3, Line 38).

With respect to Claims 16 and 19, Kaneko et al. teach wherein the magnetic position estimating means is operative to estimate the magnetic pole positions without direct detection of the magnetic pole position (Fig.1; Col.6, Lines 26 - 35).

With respect to Claims 17 and 20, Kaneko et al. teach wherein the magnetic position estimating means utilizes calculations in lieu of detection to estimate the magnetic pole position (Fig.1; Col.6, Lines 26 - 35).

With respect to Claims 18 and 21, Kaneko et al. teach wherein the voltage is controlled on the absence of a detector to sense magnetic pole position (Fig.1; Col.6, Lines 26 - 35).

Allowable Subject Matter

3. Claims 2 – 12 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

- The references of the Prior Art of record fail to teach, or suggest any obvious combination of the limitations discussed in the previous Office Action mailed on February 19, 2004, and further comprising the limitations described in claims 2 – 12 as presented before the Amendment filed on July 19, 2004.

Response to Arguments

4. Applicant's arguments filed on July 19, 2004 have been fully considered but they are not persuasive. The Examiner considers that the sections of the references indicated above to support the rejections clearly describe or show the claimed subject matter, and that any person with ordinary skill in the art would be motivated or suggested to combine both references teachings to obtain the claimed subject matter. The Examiner considers that the obvious combination of the patents to Nakada et al. and Kaneko et al. teach the claimed subject matter as discussed above.

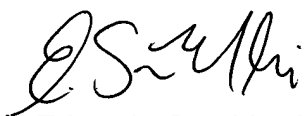
Contact Information

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edgardo San Martin whose telephone number is (571) 272-2074. The examiner can normally be reached on 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on (571) 272-2107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Edgardo San Martín
Patent Examiner
Art Unit 2837
Class 318
August 5, 2004